

121 affinities with other Polynesian systems. This provides the objective back-
 128 ground for studying the meaning of these patterns for the personalities of
 those who live within the frame of reference called Pukapukan society. This
 task is touched upon in the data on children (2). If certain problems of
 symbolism, pattern status, emotional conditioning, and all that makes up the
 dynamics of culture have been largely overlooked in these pages, it is not
 through unawareness of the existence and importance of these problems but
 solely because the type of field work represented by this and other manu-
 scripts is that which it was most practicable to carry to a conclusion.

NOTE ON PHONETIC STRUCTURE

194 Throughout this monograph Pukapukan words are written in the ordinary
 [125] English alphabet, in accordance with standard usage for Polynesian eth-
 nology. Obviously such recording represents only an approximate render-
 ing of the true sounds and words of the language.

The symbols *k*, *p*, and *t* represent the intermediates between sonant *g* and
 surd *k*, between *b* and *p*, and between *d* and *t* respectively; *k* is pre-palatal
 before the vowels *e* and *i*, post-palatal before *a*, *o*, and *u*—it is never aspirated;
p is aspirated only before the vowel *u*; *t* is always dental and unaspirated.

The lateral, *l*, is dental. The nasals are *m*, a dental *n*, and the front
 palatal *eng* (*ng*). The semivowel *w* functions as a major consonant; when
 it occurs within a word before *u* or *i* (as in the words *mauw*, *awi*) it has a
 guttural quality.

Finally, there are the bilabial spirant *v*, voiceless and unaspirated, and the
 voiceless interdental spirant, not previously recorded for a Polynesian dialect.
 This spirant (corresponding to the *th* in English "thin") is invariably palatal-
 ized, followed by a *y* slur ("thin" with a *y* inserted before the *i*, "thyin").
 This compound sound (*θ* in certain phonetic systems) is rendered by the
 symbol *y* in this monograph, but is not to be confused with the ordinary *y*
 semivowel which does not occur as a Pukapukan consonant. The Pukapukan
 voiceless interdental spirant palatalized is the sound mistakenly described by
 Macgregor (20, p. 3) as a glottal closure accompanied by "an added breath ...
 giving a sound of *i* consonant," and written by him *i*.

The glottal closure as an independent consonant is absent. The consonants
 are never long.

The vowels *a*, *e*, *i*, *o*, *u* all have the continental values. In rapid speech,
 however, a short *a* is pronounced as *u* in English "but"; short *i*, especially
 before *ng*, as *i* in English "pin". Final *i* after *t* tends to be voiceless.

Quantity and quality of vowels, presence or absence of diphthongs, and
 the location of stress are not indicated in native words. These phonetic
 characteristics are reserved for treatment in a Pukapukan dictionary which
 will include also the general rules of pronunciation governing accent.

194
197

Table 1. Comparison of *ʔ* and *w* with other Polynesian consonants.*

	PUKAPUKA	NEW ZEALAND	SAMBA	NIUE	TONGA	UYEA	ONTONG JAVA	HAWAII	MANQUERAS	RAROTONGA	TAHIITI	MANGAREVA	EASTERN ISLAND
To walk	yarle	h	a-	h	h	h	h, s	h	h, f		h	'ere	h
To err	yala	luere	(sacle)	hacle	hacle	hacle	haele	hacle	hee	'aere	haere	'ara	abere
To do	yanga	hara	sala	hala	hala	hala		hala	haa	'ara	hara	'ara	hara
Pregnant	yapu	hanga	anga	(hanga)	(hangahanga)	hangahanga	apo	hana	hana	'anga'anga	ha'a	'anga	hanga
To tie	yele	here		hele	hele			hele	fee	'ere	here	'ere	here
To mix	ycuyeu	heuheu			heuheu				feu	'eu	heu		(heu)
Tail	yiku	hiku	ai'u; i'u	hiku	hiku	hiku		hi'u		'iku		'iku	iku
Gray	yina	hina	sina	(hina)	hina			hina	hina	'ina	hina	'ina	
Friend	yon	hoa	soa	(hoa)	hoa	hoa		hoa	hoa	'oa	hoa	'oa	hoa
Spittle	yuvale	huware									huare		
Four	wa	wh, h	f, a	f	f	f	h	h	f, h		f, h		h
To make	wai	whai	fai	fai	fai	fai		ha	fa, ha	'a		'a	ha
Caus. prefix	waka	whaka	fai'a	faka	faka	faka		ha'a	fai, hai		fai	'aka	hai
House	wale	whare	fale	fale	fale	fale	hale	hale	haa, haka	'ake	fare	'are	haka
To go	wano	whano	fano	fano	fano	fano	hango		hae, fae		fano		hare
Land	wenua	whenua	fenua	fenua	fenua	fenua	(hengua)			'are	fenua	'enua	
To want	wia	hia	fia	fia	fe	fia		hia	fenua, henua	'enua	fenua	'enua	henua
Paddle	woe	hoe	foe	foe	foe	foe	hoe	hoe	fia, hia	'ia	bia		
New	wou	hou	fou	fou	fou	fou		hou	hoe	'oe	hou	'ou	hou
To swallow	wolo	horo	folo	folo	folo	folo		hou	hou	'ou	horo	'oro	horo
Seed	wua	hua	fua	fua	fua	fua	hua	hua	boo		hua	'ua	hua
To open	wuke	huke	fu'e	fuke	fuke	fuke			hua	'uke			

* This table reflects all the limitations of the phonetic and dictionary material available for present study.

194
197

The main body of Pukapukan sounds presents no special features of comparative interest. But the two consonants *ʔ* and *w* are peculiar members of the otherwise usual Polynesian consonantal system. The Pukapukan *w* is not to be confused with the sound which is recorded as *w* in some dialects and which is probably more correctly described as the intermediate *β*, a sound found in primitive Hawaiian and in Rarotongan. Table 1 indicates the role of *ʔ* and *w* in widely distributed Polynesian words. On the information of Te Rangi Hiroa (Dr. Peter H. Buck), the *h* mistakenly recorded by Tregear (30) for Mangarevan is here discarded. It is regrettable that the presence or absence of the glottal stop as a consonant has in too many Polynesian dialects become a matter of considerable mystery.

In New Zealand, both *h* and *wh* are used before the vowels *e*, *i*, *ε*, but *h* is required (in most words) before the vowels *o* and *u*. In no other dialect, except Tahitian, is this distinction evident. Maori *wh* equates with the simple Pukapukan *w*, Maori *h* with the Pukapukan *ʔ* or *w*. Maori *ha* and *he* tend to change to Pukapukan *ʔa* and *ʔe*; Maori *hi* sometimes becomes Pukapukan *ʔi*, more often Pukapukan *wi*. A more consistent rule of consonantal change is evident in comparing Pukapukan and Samoan, where Pukapukan *ʔ* becomes Samoan *s* and Pukapukan *w* becomes Samoan *f*. In Niue, Tonga, and Uvea, Pukapukan *ʔ* changes to *h*, Pukapukan *w* to *f*. In Hawaii, Rarotonga, Tahiti, Mangareva, Easter Island, and probably also Ontong Java, one consonant only (*h* or *ʔ*) occurs in the several words where western Polynesian dialects distinguish between *s* and *f*, or between *ʔ* and *w*.

The most striking similarity to the Pukapukan sound *ʔ* occurs not in Polynesia proper, but in Fiji. Hazelwood (17, p. 1) describes for Fiji the consonant he writes *c* as "*tha*, as in *that* or *this*; not as in *thick*." It appears, therefore, that this sound is the voiced interdental spirant, *ʃ*. In some words in which this Fijian consonant occurs it corresponds to the Pukapukan *ʔ*: *yala* (to err), *cala*; *yaw* (breeze), *caucau*; *yiyi* (to split), *cici*; *yila* (to shine), *cila*; *yoka* (to spear), *coka*; *oyo* (provisions), *oco*; *yula* (to fasten), *cula*; *yahi* (to pierce), *cubi*.

In other words, the Fijian *ʃ* is used before or between vowels where corresponding words in Pukapukan require no consonant: *akau* (reef), *cakau*; *augi* (to blow), *cangi*; *anau* (outrigger), *cama*; *iva* (nine), *civa*; *mos* (to sleep), *mocs*; *mos* (to paddle), *vocs*.

Pukapukan informants were not consistent in their use of the *ʔ* at the beginning of certain words. Alternately, for example, they said *iiili* (to ask) and *yiliyili*. This, together with the fact that few Pukapukan words collected commence with a vowel, gives me the strong impression that formerly a *ʔ* preceded all vowels now commencing words. If this is true, then

² In the following comparisons the Pukapukan term is given first, followed by the translation in parentheses, and the Fijian term.

194
197

the group of words in which Fijian *ʃ* appears between vowels is not properly distinguishable from the words where Fijian *ʃ* corresponds to Pukapukan *θ*.

In another category, however, Pukapukan *θ* is replaced by the Fijian *s*, said to be pronounced "as in English": *yanga* (to do), *sanga*: *yelu* (to comb), *seru*: *yeye* (foolish), *sese*: *yau* (to mix), *seu*: *yika* (netting needle), *sika*: *yinu* (oil), *sinusinu*: *yua* (water), *suasua* (wet).

Like the *ʃ* sound, Fijian *s* occurs in some words where no Pukapukan consonant is now used: *ala* (path), *sola*: *anguanga*², *sangasanga*: *olo* (to rub), *solo*.

I find no suggestion in the literature that the Fijian *ʃ* is ever palatalized, though this is invariable with the Pukapukan *θ*. But the semivowel *y* is another Fijian consonant used in some words where Pukapukan requires no consonant: *ate* (liver), *yate*: *atu* (row), *yatu*.

In a few Fijian words *y* corresponds to Pukapukan *θ*: *yala* (to encircle), *yala*: *yau* (to come), *yau* (to come or go): *yau* (dew), *yanyau* (fog or mist).

The sound *θ* appears in the Melanesian sound system as worked out by Ray (23,p.30). It is noted in particular for Nengone and Lifu of the Loyalty Islands and for Aneityum in the southern New Hebrides (23,pp.77,139). Because of inadequate linguistic material it is impossible to determine the relation between this Melanesian sound and the voiceless spirant of Pukapuka.

Pukapukan *w* is Fijian *v*. Other consonants seem to correspond in words common to both as follows (Pukapukan given first): *k*, *k*: *k*, *ngg* (*q*)?: *l*, *l*: *l*, *ndr*: *m*, *m*: *n*, *n*: *ng*, *ng*: *p*, *mb*: *t*, *t*: *t*, *nd*: *v*, *w*.

It is regrettable that paucity of phonetic material for any Fijian dialect renders it impossible to draw conclusions, but when trustworthy phonetic and ethnographic material becomes available for the cultures crudely lumped together today as Fijian, it is not unlikely that phonetic and cultural anomalies found in the otherwise prevailing Polynesian culture of Pukapuka will prove no longer to be unique but part of a western sub-culture that may be traced from its eastern boundary in Pukapuka across to, and beyond, Fiji.

POPULATION

161
731
167

The population for the years for which figures are available (7) is as follows: 1906, 435; 1911, 490; 1916, 474; 1926, 526; 1935, 632.

The increase in population from 1906 to 1911, followed by a decrease in 1916, is at least partly explained by the fact that 52 Pukapukans were transferred to Rarotonga in September 1914, in order to relieve distress caused by the tidal wave that swept Pukapuka in January of that year. The population today shows a great increase over the population figures of 1916 and 1926. Records for 1933 and 1934 show a total of 41 births as compared

² Pukapukan informants held that the reduplicated form of the word *yanga* is not *yanguanga*, but *anguanga*.

NOTES ON THE ETHNOLOGY OF PUKAPUKA

By

GORDON MACGREGOR

INTRODUCTION

ACKNOWLEDGMENTS

114 The present notes on Pukapuka are based on field observations
127 which I made during the three-day visit of the Templeton Crocker Expedition to the island in April 1933, on a study of artifacts in Bernice P. Bishop Museum, and on ethnological information about the island found in literature.

[124] During the visit I remained ashore as the guest of Mr. Geoffrey Henry, Resident Agent, who extended to the party all the courtesy and hospitality for which the South Seas are noted and devoted all his time to us, explaining what he could of Pukapukan customs, guiding us to places of interest, and arranging dances and wrestling exhibitions. I am deeply grateful to him for the ethnological information and the time he devoted to interpreting for me while I questioned native informants. Appreciation and thanks are due also to the chiefs and people of Pukapuka for ethnological specimens.

I am particularly indebted to Mr. Templeton Crocker for his generous invitation to accompany the expedition, for his notes and measurements of the large sailing canoe and the native names of the parts of bonito hooks, and for permission to use the excellent drawings and photographs made by Mr. Toshio Asaeda.

LANGUAGE

- 194 The Pukapuka dialect has five vowels, *a, e, i, o, u*, and nine consonants, *k, l, m, n, ng, p, t, v*, and *w*. The *h* is dropped but is represented in speech by the glottal closure, as in the Mangaian dialect and two Maori dialects (14, p. 6). * The sound *th* is frequently given instead of *h*.

When the glottal closure is at the beginning, and sometimes when it is in the middle of a word, an added breath is introduced before the succeeding vowel, giving a sound of *i* consonant. This is repre-

* Numbers in parentheses refer to Literature Cited, p. 40.

194 sented in the text as 'i. This extra sound following *h* is found in
 197 the dialect of the Tokelau Islands (9), Manihiki, and Rakahanga (13). Many natives of Pukapuka drop the glottal closure at the beginning of a word and retain only the *i* sound. To English-speaking people this sounds like *y*, as in the word *year*, and has led Frisbie (3), Hutchin (6), and Trotter (17) to write *y* in words that contain this sound. A comparison of words written with *y* by Trotter with cognate words of the Maori dialect (16) and the Samoan dialect (10) shows that the *y* becomes *h* or *r* in Maori and *s* or *l* in Samoan. I believe that Trotter has confused the liquid sound of the Pukapukan *l* with the *y* sound which he heard in other words. He has given *lengalenga* (green) as "yengayenga" and *lava* (multitude) as "yava". The forms *lengalenga* and *lava* are found in the Samoan dialect also. In all other words containing *y*, the *y* becomes *h* in the Maori form and *s* in the Samoan form, as shown in the following comparative list of words:

PUKAPUKA	MAORI	SAMOA	TRANSLATION
ye	_____	se	not
yauariki matangi	hau	sau	gentle breeze, fresh, cool, dew
yeuyu	heuhu	seu	to mix or scatter
yoka	hoka	so'a	to husk
xyongi	hongī	sogi	to smell or kiss
yna	hina	sina	grey, white

The original Polynesian *h*, which Buck (13) suggests has been retained in Hawaii, and the old form *wh* of the Maori dialect (also retained in the Manihiki dialect) has been developed into a full *w* sound in Pukapuka speech. The Hawaiian word *hau* (*whau* in Maori) becomes *wau* in Pukapuka.

The sound of *t* also has a variant sound *ts* before the vowel *i*, as in the Tongan and several other Polynesian dialects. *K* is often given the sound of hard *g*, a characteristic often heard in Tokelau speech. The name of the Pukapuka god, Te Akuaku, was pronounced by one informant "Te Aguagu". *L* has an intermediate sound between *l* and *r*, as pronounced by many of the natives. In representing it as *l*, I may be influenced by the fact that I had previously heard only Polynesian dialects containing the true *l*. Hutchin, Frisbie, and Trotter, familiar with dialects containing *r*, evidently heard the sound of *r* and have represented it so in their writings. The sound of *v* exists in the words *vaka* (canoe) and *vai* (water) but is usually sounded as *w*.